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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,228

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EXAMINER

MAKI, STEVEN D

ART UNIT

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,228	Applicant(s) YAMAJI ET AL.	
	Examiner Steven D. Maki	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-15 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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- 1) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 2) Claims 2-15 and 17-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 19, subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is "fractionating means provided on the mixer". None of the invention embodiments teach providing a fractionating means on the mixer. Figure 6, for example, shows fractionation port 33 being provided at the top wall of chute section 5 instead of a fractionation means being provided on outer wall 43 of mixer 4. Also, the description of "fractionating means" is not found in the original disclosure.

- 3) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 4) Claims 4-6, 13-15 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is indefinite because the scope of a machine claim dependent on a method claim which in turn is dependent on a machine claim is uncertain. It is noted that the dependency of claim 4 was changed from "claim 1" to claim 18 without proper underlining and bracketing. It appears that claim 4 should depend on claim 19.

Claim 13, which depends on claim 19, describes "a hollow connector section" and "a chute section". It is unclear if these sections are the same as those in claim 19 or if additional sections are being claimed. Since the former appears to be intended, it is suggested to (1) in claim 13, change "a hollow connector section" to --said hollow connector section" and (2) in claim 13 change "a chute section" to --said chute section--.

5) Applicant is advised that should claim 13 be found allowable, claim 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claims 13 and 17 have the same scope.

6) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8) Claims 2, 7, 9, 10 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ainsley et al (US 5,714,032).

See figure 1. The claimed "fractionation means" reads on the apparatus structure defined at the split between pumps 26, 26' ("valve means").

9) Claims 4-7, 9-10, 13-14, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 808 (JP 08-112808) in view of Miura et al (US 6,193,408), Bold (CA 2116132) and Sucech et al (US 5,683,635).¹

Japan 808 discloses a method of manufacturing a gypsum board comprising feeding a lower paper sheet 110, depositing a gypsum slurry comprising calcined gypsum and water onto the lower paper sheet using conduit 140, depositing a core slurry onto the coated lower paper sheet from a conduit 190 ("chute section"), depositing a gypsum slurry onto an upper sheet 160 from conduit 150 and applying the coated upper sheet to the deposited core slurry. See figure 2 and machine translation. The gypsum slurry in each conduit is supplied from a mixer 120. Japan 808 does not recite connecting the "chute section" 190 to the mixer 120 using a "hollow connector section".

¹ As correctly noted by applicant, CA 2116132 to Bold was listed on the PTO 1449 submitted by applicant. As also correctly noted by applicant, WO 93/03899 is a counterpart of CA 2116132. The header of the specification for CA 2116132 recites "WO 93/03899" and "2116132".

As to claims 19, 9 and 10, it would have been obvious to one of ordinary skill in the art to connect Japan 808's "chute section" 190 to the mixer 120 using a "hollow connector section" since Miura et al, also directed to the gypsum board art, suggests connecting a "chute section" 41 to a mixer 10 for mixing water and calcined gypsum using a "hollow connector section" 45 to facilitate feeding the gypsum slurry mixed by the mixer to the "chute section 41". Furthermore, it would have been obvious to one of ordinary skill in the art to provide a "fractionation means" for feeding gypsum slurry to the sheets from the chute section 190 disclosed by Japan 808 or the "hollow connector section 45" suggested by Miura et al instead of directly from the mixer 120 since (1) Bold, also directed to the gypsum board art, suggests mixing calcined gypsum and water in a mixer 10a, feeding core slurry material through a "flow line" to another mixer 10b for adding additives and feeding gypsum slurry for upper and lower layers of the board from the **single "flow line"** for the gypsum core slurry so that advantageously the core material may be provided with a different composition ("additives") than the upper and lower layers and (2) Sucech et al, also directed to the gypsum board art, suggests feeding gypsum slurry to upper and lower sheets through flow lines 46 and 48 from a **single "flow line"** which communicates with the mixer at one outlet 44. The expected and predicted result of this combination from the teachings of Bold is providing Japan 808's gypsum board manufacturing method and apparatus with the additional beneficial capability of forming a gypsum core having a composition different from the upper and lower layers. Hence, Bold and Sucech et al recommend splitting / fractionating gypsum slurry from a location located outside the mixer.

As to claims 4-6 and 14, it would have been obvious to one of ordinary skill in the art to provide Japan 808's gypsum board making apparatus with the claimed foam inlet and use it to introduce foam into the core slurry since Sucech et al suggests providing an inlet for foam to the flow line for a core slurry in order to provide the capability to reduce the weight of the gypsum board.

As to claim 7, the particular location for the fractionation port on the chute section / hollow connector section would have been obvious and could have been determined without undue experimentation in view of (1) the general illustration by Japan 808 of conduit 160 extending from the upper side of the mixer at a location in the vicinity of chute section 190 and (2) the suggestion from Bold and Sucech et al to split (fractionate) one flow line into at least two separate flow lines for gypsum slurries.

As to claims 13 and 17, Japan 808 teaches the use of roll coaters 100 and 110.

10) Claims 2-3, 8 and 11-12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 808 (JP 08-112808) in view of Miura et al (US 6,193,408), Bold (CA 2116132) and Sucech et al (US 5,683,635) as applied above and further in view of Hauber et al (US 6,878,321).

As to claims 2, 3, 8, 11 and 12, it would have been obvious to provide "valve means" for opening and closing the fractionation port and to use such valve means to obtain desired flow rate since Hauber et al suggests providing a controller 46 for regulating flow of a core slurry. As to claim 3, it would have been obvious to provide a casing as claimed since (1) Hauber et al teaches locating the controller 46 in the vicinity of the mixer (figure 1) and (2) it is taken as well known / conventional per se to enclose

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a valve within a casing. As to claim 8, it would have been obvious to one of ordinary skill in the art to provide the claimed driving device and drive control means since it is taken as well known / conventional in the art to operate a valve using driving device and drive control means. The suggestion to use a "valve" to control flow of gypsum slurry comes from Hauber et al instead of the official notice.

11) Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 808 (JP 08-112808) in view of Miura et al (US 6,193,408), Bold (CA 2116132) and Sucech et al (US 5,683,635) as applied above and further in view of Seecharan et al (US 6,190,476).

As to claims 15 and 18, it would have been obvious to one of ordinary skill in the art to provide densification mixers 55, 54 as disclosed by Seecharan et al and use them to perform the claimed agitating step for the slurries delivered to the paper sheets since Seecharan et al suggests using such high densification mixers to prevent the coating layers for the paper sheets from having too low a density which interferes with the bond of the gypsum to the paper.

Remarks

12) Applicant's arguments filed 3-4-08 have been fully considered but they are not persuasive.

With respect to the 102 rejection, applicant argues that outlet 24 is not disposed on outlet 44 or deposition station 46. This argument is irrelevant. Claim 19 requires a fractionation means. This claimed fractionation means reads on the apparatus structure defined at the split between pumps 26 and 26'. Claim 1 fails to require providing the

fractionating means on an outlet from a mixer having a port for adding foam. In other words, applicant's argument that outlet 24 is not disposed on outlet 44 or deposition 46 is not commensurate in scope with the claims and is therefore not persuasive.

Furthermore, the slurry flowing through outlet 24 is "fractionated" at the split between pumps 26, 26'. A fractionated slurry flows through one of the pumps and the remainder of the slurry flows through the other pump. The chute section and hollow section read on the apparatus structure of Ainsley et al, which delivers slurry from mixer 12, through outlet 24 (a hollow connector section) and to one of paper liners.

Applicant comments that it is possible control the density of the gypsum slurry to be fractionated from mixer, restrict the change in the flow rate of the fractionated slurry and reduce the consumption of foam or foaming agent. Examiner comments that unexpected results cannot overcome a 102 rejection.

With respect to the 103 rejection, applicant argues that Japan 808 and Miura et al disclose a mixer which mixes calcined gypsum and water and deposits the gypsum slurry onto the lower paper sheet through the chute section. More properly, Bold and Sucech et al fractionate a slurry using a "fractionation means" located downstream from the mixer. In other words, Bold and Sucech, like applicant, divide a slurry at a location downstream of the mixer.

Applicant argues Bold does not relate to a process and machine for the production of gypsum board, which has a gypsum core covered with sheets of paper for gypsum board liner. This argument is not persuasive. Japan 808 and Bold are in the same field of endeavor of apparatus and process for making gypsum board. Japan

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808 and Bold also address the problem of delivering separate slurries from one mixer to different locations. Japan 808 divides the slurry at the mixer. Bold, like applicant, divides the slurry at a downstream location of the mixer. By dividing the slurry downstream of the mixer, the core slurry can be separately modified. More specifically, this system of Bold permits additive(s) to be added to the core slurry without also adding the additive(s) to the other slurries. It is also noted that (1) Bold's gypsum board may have textile gypsum board liners (figure 5) and (2) Bold recognizes that prefabricated foam may be used (page 28).

Applicant argues that the process and machine for manufacturing fiber reinforced plaster plates are significantly different from those for manufacturing gypsum boards. This argument is off-point. Bold's teaching to fractionate a gypsum slurry at a downstream location is independent on whether or not those slurries are delivered to a paper sheet or a textile sheet. With respect to Japan 808, any position along the chute is a downstream location.

Applicant comments that it is possible control the density of the gypsum slurry to be fractionated from mixer, restrict the change in the flow rate of the fractionated slurry and reduce the consumption of foam or foaming agent. Examiner comments that applicant obtains these benefits by fractionating the gypsum slurry at a location downstream of the mixer and that both Bold and Sucech et al teach fractionating a gypsum slurry at a downstream location of a mixer. Applicant also comments that foam or foaming agent can be added in the chute section after fractionation. Examiner comments that Bold teaches that an additive can be added to a core gypsum slurry after

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fractionation. None of the claims require the location of the fractionation to be relatively close to the mixer as shown in figure 6 of applicant's disclosure. No unexpected results commensurate in scope with the claims have been shown.

13) No claim is allowed.

14) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven D. Maki/
Primary Examiner, Art Unit 1791

Steven D. Maki
June 9, 2008